Comment on the proposed conservation of the names *Geopeltis* Regteren Altena, 1949, *Geoteuthis* Münster, 1843, *Jeletzkyteuthis* Doyle, 1990, *Loligosepia* Quenstedt, 1839, *Parabelopeltis* Naef, 1921, *Paraplesioteuthis* Naef, 1921 and *Belemnotheutis montefiorei* Buckman, 1880 (Mollusca, Coleoidea)

(Case 2987; see BZN **53**: 253–260; **54**: 104, 184–185)

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We welcome Dr Riegraf's support in BZN **54**: 184–185 for our proposed conservation of various coleoid names.

Riegraf proposes the suppression of the name *Atramentarius* Buckland & Agassiz in Buckland, 1838. This name is an MS name of Buckland's. To the best of our knowledge, it appears in print only in Agassiz's (1838) footnote cited by Riegraf, and in a brief reference by Quenstedt (1849, p. 504) who does not himself use the name elsewhere. We therefore agree with Riegraf's proposal for the suppression of *Atramentarius*. We support also his proposal that *Belemnotheutis* Pearce, 1842 and the name of its type species *Belemnoteuthis* [sic] *antiqua* Pearce, 1847 be placed on the Official Lists, and the incorrect subsequent spelling *Belemnoteuthis* Pearce, 1847 on the Official Index.

Comments on the proposed conservation of the specific and subspecific names of *Trigonocephalus pulcher* Peters, 1862 and *Bothrops albocarinatus* Shreve, 1934 (Reptilia, Serpentes) by the designation of a neotype for *T. pulcher*

(Case 2921; see BZN **54**: 35–38, 245–249)

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Schätti & Smith (BZN **54**: 35–38) submitted a proposal to the Commission in an attempt to resolve the taxonomic confusion surrounding two species of pitviper (Squamata: Viperidae: Crotalinae) that occur in northern South America. One of these has a green dorsum with dark transverse bands, occurs on the Amazonian versant of the Andes in Ecuador and Colombia, and is arboreal. The other species (hereafter referred to as the western species) has a dorsum with a brown ground color, occurs on the Pacific side of the Andes in Ecuador and Colombia, and is terrestrial. Peters (1862) described the upper Amazonian species as *Trigonocephalus pulcher*, the holotype of which (specimen ZMB 3868) is housed in the Zoologisches Museum der Humboldt-Universität in Berlin. However, Boulenger (1896) mistakenly applied the name *pulcher* to the western species.

In their application Schätti & Smith contend that 'subsequent authors have all followed Boulenger's (1896) usage' (para. 1) and that '*pulcher* has never been used for the Amazonian species for which Peters (1863) [sic] proposed it' (para. 5). They also assert that the name *Bothrops albocarinatus* Shreve, 1934, a junior synonym of *Trigonocephalus pulcher* Peters, 1862, has been 'consistently applied' (para. 5) to the Amazonian species since 1934. Based on these contentions, they ask the Commission to set aside the holotype of *Trigonocephalus pulcher*, so that the 'universal usage' of *pulcher* (para. 6) for the western species can be maintained.

The purpose of this comment is to review past use of the name *pulcher* in order to demonstrate that it has not been universally applied to a single species since Boulenger (1896); thus, no justification exists for ruling against the Principle of Priority in this case. We also demonstrate that the name *albocarinatus* has a more intricate taxonomic history than Schätti & Smith imply.

Publications since Boulenger (1896) that include the name *pulcher* (in combination with generic names *Bothrops*, *Bothriopsis*, or *Lachesis*) can be divided into six categories.

1. At least one author (Noguchi, 1909, p. 38) provides a description of *pulcher* that can only refer to the Amazonian species: 'color olive with brownish crossbands with white rim'.

2. Several authors report a distribution for *pulcher* that can only refer to the Amazonian species. Klemmer (1963, p. 412) lists the range of *pulcher* as 'Amazonas-Tiefländer in Ecuador und Peru', and Minton, Dowling & Russell (1968, p. 61; sometimes cited as Department of the U.S. Navy, 1968) report a range of eastern Ecuador and eastern Peru.

3. Other authors also report a distribution for *pulcher* that can only refer to the Amazonian species, yet these same authors provide descriptions of *pulcher* that can only refer to the western species. J.A. Peters (1960, p. 510) lists the range of *pulcher* as 'Peru and Ecuador in the Amazonian lowlands', but in his key (p. 509) describes *pulcher* as having 'keels on dorsal scales much shorter than scale itself; ventrals 156–174; subcaudals 47–64'. J.A. Peters & Orejas-Miranda (1970, p. 54) report the distribution of *pulcher* as 'equatorial forests in Amazonian lowlands of Ecuador and Peru', but list characteristics (p. 42) that refer to the western species: tail not prehensile, keel shorter than scale, and subcaudals mostly paired. Schätti & Smith (para. 5) fail to point out the important contradiction between distribution and morphology when they state that Peters's (1960) and Peters & Orejas-Miranda's (1970) use of *pulcher* applies to the 'terrestrial' (= western) species.

4. Many authors (for example, Phisalix, 1922; Amaral, 1930; Hoge & Romano, 1971; Hoge & Romano-Hoge, 1981; Groombridge, 1986) who mention *pulcher* include little or no information for determining the species to which the name is applied.

5. Authors who explicitly use *pulcher* to refer to the western species are Campbell & Lamar (1989, 1992). All information presented by these authors (photographs, distribution and description) associates the name *pulcher* with the western species. Pérez-Santos & Moreno (1991) provide a description and distribution that apply to the western species. The works of Peters (1960), Peters & Orejas-Miranda (1970), and Hoge & Romano-Hoge (1981) do not fall into this category — contra Schätti & Smith (para. 5).

6. Several authors chose not to use the name *pulcher* for the Amazonian or the western species after realizing that the holotype of *pulcher* belongs to the Amazonian species. Schätti & Kramer (1993) suggested that the name *pulcher* be suppressed so that *albocarinatus* could continue to be used for the Amazonian species. They then established a new name *almawebi* for the western species. Golay et al. (1993) list *Trigonocephalus pulcher* Peters, 1862 as a junior synonym of *Bothriechis oligolepis albocarinatus* (Shreve, 1934), and they list *Lachesis pulcher* Boulenger, 1896 as a junior synonym of *Porthidium almawebi* Schätti & Kramer, 1993. Bauer, Günther & Klipfel (1995, p. 80) list the present name of *Trigonocephalus pulcher* Peters, 1862 as '*Bothriechis oligolepis albocarinatus* (Shreve, 1934) fide Schätti & Kramer (1993)', and remark that 'Schätti & Kramer (1993) discussed the application of the junior synonym of Shreve to this taxon'.

Clearly, there has been neither consistent nor universal usage of the name *pulcher*.

While it is true that *albocarinatus* has only been used to refer to the Amazonian species, other names have also been applied to this species. We have already established that *pulcher* has been used for this species in numerous publications, but another name (only a few months younger than *albocarinatus*) exists in the literature as well. *Bothrops alticolus* Parker, 1934 has only recently been recognized as a junior subjective synonym of *albocarinatus* (see Burger, 1971; Campbell & Lamar, 1989; Schätti et al., 1990; Golay et al., 1993). Many publications (e.g. Peters, 1960; Klemmer, 1963; Duellman, 1979) list both *albocarinatus* and *alticolus*, thus muddling somewhat the taxonomic history of *albocarinatus*. The opinion of Schätti & Kramer (1993) that *Bothriopsis albocarinata* is a subspecies of *Bothriopsis oligolepis* further complicates the history of this name, especially since this opinion has not been universally accepted (Campbell et al., in press).

In addition to the varied uses of the names *pulcher* and *albocarinatus*, it is important to mention that both the Amazonian species and western species are extremely rare in museum collections and presumably in nature as well. Very little has been published about these snakes, so there is not a large body of literature in which the names have been used incorrectly. To our knowledge, human envenomation has not been recorded for these species, so no medical literature will be affected by applying the correct names. In short, the names *pulcher* and *albocarinatus* have been used so few times that even if usage of them were universal, there would not be a strong case for ruling against the Principle of Priority.

If the name *pulcher* is used for the Amazonian species as Peters (1862) intended and as defined by the holotype, a name is needed for the western species. The name available for the western species is *Bothrops campbelli* Freire-Lascano, 1991. The validity of this name has been questioned (see Schätti & Kramer, 1993), but Freire-Lascano's work clearly meets the criteria of the Code for publication (Kuch, BZN **54**: 245–248; Campbell et al., in press).

Because there has been no stable use of the names *pulcher* and *albocarinatus*, we believe there is no justification for setting aside the holotype of *Trigonocephalus pulcher*. The Code provides specifically for full resolution of confusion surrounding these names. These rules have already been applied and the matter resolved (Campbell et al., in press): the eastern species is *Bothriopsis pulchra* (Peters, 1862) and the western species is *Bothrops campbelli* Freire-Lascano, 1991. *Bothrops albocarinatus* Shreve, 1934 and *Bothrops alticolus* Parker, 1934 are junior subjective synonyms of

Bothriopsis pulchra. *Porthidium almawebi* Schätti & Kramer, 1993 is a junior subjective synonym of *Bothrops campbelli*. The synonymies and remarks provided by Campbell et al. (in press) clarify the complex nomenclatural history of these two species for future workers.

Acknowledgement

We thank J.A. Campbell and C.L. Stewart for critically reading an earlier draft of this comment.

Additional references

Amaral, A. do. 1930. *Serpientes venenosas sudamericanas*. Pp. 788–805. Sexta reunion de la Sociedad Argentina de Patologia Regional del Norte. Organized and published by Salvador Mazza.

Campbell, J.A., McDiarmid, R.W. & T. Toure (Eds.). In press. *Snake species of the world*, vol. 1. Herpetologists' League.

Duellman, W.E. 1979. The herpetofauna of the Andes: patterns of distribution, origin, differentiation, and present communities. Pp. 371–459 *in* Duellman, W.E. (Ed.), *The South American herpetofauna: its origin, evolution, and dispersal*. Monograph of the Museum of Natural History, University of Kansas, No. 7.

Groombridge, B. 1986. Comments on the M. pterygoideus glandulae of crotaline snakes (Reptilia: Viperidae). *Herpetologica*, **42**: 449–457.

Minton, S.A., Jr., Dowling, H.G. & Russell, F.E. 1968. *Poisonous snakes of the world. A manual for use by U.S. amphibious forces*. 212 pp. United States Government Printing Office, Washington, D.C.

Noguchi, H. 1909. *Snake venoms. An investigation of venomous snakes with special reference to the phenomena of their venoms*. 315 pp. Carnegie Institution of Washington, Washington, D.C.

Phisalix, M. 1922. *Animaux venimeux et venins*, vol. 2. 864 pp. Masson, Paris.

(2) Beat Schätti

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In his previously published comment (BZN **54**: 245–249, December 1997) Kuch noted that 'the Amazonian species represented by the holotype of *Trigonocephalus pulcher* Peters, 1862 is listed under [...] three names (*Bothrops albocarinatus*, *B. alticolus*, *B. pulcher*) in most of the major works on venomous snakes or influential regional checklists'. He stated that 'the senior name *pulcher* [...] has been correctly used at least four times as the valid name for the eastern (Amazonian) species' by J.A. Peters (1960), Klemmer (1963), U.S. Navy Department (1968) and J.A. Peters & Orejas-Miranda (1970).

However, Kuch admitted that 'none of the cited works includes a description of *B. pulcher*' and that the 'notable exceptions [...] J.A. Peters (1960) and J.A. Peters & Orejas-Miranda (1970)', although indicating an Amazonian distribution, gave morphological data that 'apply to the western species rather than to the Amazonian one'. Further, we learn that 'in many of these publications, only the stated geographical distribution allowed a decision as to whether a particular name was used for the western or for the Amazonian species. The possibility that authors might have referred to the western species while indicating an erroneous (Amazonian) distribution can therefore not be refuted'.

Except for the original description (Peters, 1862), all citations of *pulcher* based on examined material, including the studies of Campbell & Lamar (1989, 1992), refer to the western species, i.e. [*Lachesis*] *pulcher* sensu Boulenger (1896). As noted by Kuch, this is also the case with 'the characters used for the identification of *pulcher*' by J.A. Peters (1960) and J.A. Peters & Orejas-Miranda (1970). Boulenger (1896) is not cited in these publications because the references are restricted to the original description of a taxon and synonyms (J.A. Peters, 1960, p. 491; J.A. Peters & Orejas-Miranda, 1970, p. v). J.A. Peters (1960) erroneously mentioned 'three syntypes' of *pulcher* and, clearly, the Berlin holotype was not examined. This work served as a basic reference for Klemmer's (1963) checklist and the manual of the U.S. Navy Department (1968), and the incorrect distribution given for *pulcher* only proves how easily this kind of error may enter into the literature. In any case, scientific names denote biological species, defined by name-bearing specimens, and not imaginary geographical ranges.

Kuch does not question the crucial point of the application, namely that under the Code *Bothrops albocarinatus* Shreve, 1934 is a junior objective synonym of *Trigonocephalus pulcher* Peters. His reservations concern the notion that *B. albocarinatus* and *Lachesis bilineatus* var. *oligolepis* Werner, 1901 are conspecific (*Bothriechis oligolepis albocarinatus*), as suggested by Schätti & Kramer (1993). However, in our application we (Schätti & Smith) did not use 'the hypothetical problem of a name change of *oligolepis* to *pulcher oligolepis*' as an argument in favour of their conservation, as alluded to by Kuch, but merely pointed out a possible consequence if the Code were to be strictly applied. Finally, *Bothrops alticolus* Parker, 1934 is a junior subjective synonym of *B. albocarinatus* Shreve (see Schätti & Kramer 1993) and therefore does not affect the case.

The comment by Gutberlet & Harvey (above) raises similar arguments as that by Kuch. The conclusion of Schätti & Kramer (1993) on the status of *Bothrops albocarinatus* Shreve is confirmed. But Gutberlet & Harvey conclude that there is no justification for ruling against the Principle of Priority (i.e. setting aside the holotype of *T. pulcher*). Referring to a yet unpublished paper (Campbell et al., in press) they state that the rules of the Code 'have already been applied and the matter resolved'. However, the proposed use of *pulcher* for the eastern species certainly does not contribute to stability or universality in nomenclature.

Prior to Schätti & Kramer (1993), the availability of *Bothrops campbelli* Freire, 1991 was questioned by Campbell & Lamar (1992). I have never seen Freire's (1991) publication in another form than as a photostatic copy, and the specific name *campbelli* has never been published in *Zoological Record* up to vol. 132. Irrespective of Freire's (1992) republication of *B. campbelli* and the intraspecific concept or generic allocation of *Bothriechis oligolepis* (Werner), the identity of the holotype of *Trigonocephalus pulcher* Peters makes it necessary to conserve *pulcher* as well as *Bothrops albocarinatus* Shreve, as Prof Smith and I proposed in our application.

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1. In their proposal for Case 2921, Schätti & Smith ask the Commission to use its plenary powers to set aside the existing holotype (ZMB 3868 in the Zoologisches Museum der Humboldt-Universität in Berlin) for *Trigonocephalus pulcher* Peters, 1862 and to allow the designation of a neotype.

2. In two insightful comments, Kuch (BZN **54**: 245–249) and Gutberlet & Harvey (above) have opposed this proposal and pointed out a number of weaknesses in it. Their conclusion was that no action by the Commission was required, and that the western species should bear the name *campbelli*, and the eastern species the name *pulcher*. I am in full agreement with the factual basis of their argument, in particular the availability of the name *campbelli* Freire, 1991, and the historically ambiguous usage of the name *pulcher* Peters, 1862; the reader is referred to Kuch's comment for details on the literature regarding this problem.

3. Designation of a neotype for *Bothrops pulcher* (Peters, 1862) is unacceptable as the holotype remains in existence; a holotype is also in existence for *B. campbelli* Freire, 1991, the name of which is available for the species from which the neotype of *pulcher* would be selected under Schätti & Smith's proposal.

4. However, it is my view that following the course of action proposed by Kuch and Gutberlet & Harvey, i.e. no intervention by the Commission, would lead to considerable instability and confusion, in that the name *pulcher*, which is frequently used for the western species, would become the correct name of the eastern species for which the well-established, unambiguous name *albocarinatus* Shreve, 1934 is already available.

5. Kuch and Gutberlet & Harvey are correct in saying that the name *pulcher* has, in many publications, been associated with an explicit or implicit range designation of the Amazonian (eastern) versant of the Andes. Their interpretation is that the authors of these publications were referring to the eastern species described as *pulcher* by Peters (1862), unless evidence to the contrary was presented. However, with the exception of Noguchi (1909), I am not aware of a single publication since Peters (1862) in which the name *pulcher* is accompanied by a description or key which unambiguously refers to the eastern, Amazonian species described by Peters (1862). On the other hand, in at least seven publications (Boulenger, 1896; J.A. Peters, 1960; J.A. Peters & Orejas-Miranda, 1970; Pérez-Santos & Moreno, 1988, 1991; Campbell & Lamar, 1989, 1992) the use of the name *pulcher* is accompanied by descriptions, data and/or illustrations which unambiguously refer to the western species (even though the indicated distribution corresponds to that of the eastern species in Peters, 1960 and Peters & Orejas-Miranda, 1970). Several of these works are highly influential. In particular, the publication by Campbell & Lamar (1989) is likely to remain for many years the standard text on Neotropical pitvipers. The consequence is that the name *pulcher* has, in recent years, become increasingly strongly associated with the western species, and not the eastern species described by Peters (1862). Clearly, the use of the name *pulcher* is thus tainted with a long history of ambiguity and confusion. I therefore agree with Kuch's comment that preserving this name for the western species through designation of a neotype, as proposed by Schätti & Smith, would not benefit nomenclatural stability or prevent confusion.

6. For the eastern species, the name *albocarinatus* Shreve, 1934 is available, with *alticolus* Parker, 1934 as a subjective junior synonym. The name *albocarinatus* has not been used for any other species, and therefore does not give rise to any confusion.

7. The result of a rejection of the proposal by Schätti & Smith would be that the eastern species, currently widely known under the unambiguous name *albocarinatus*, would have this substituted with the highly ambiguous, tainted name *pulcher*, which has become increasingly associated with the western species. This strict interpretation of the Principle of Priority would, in my view, lead to quite unnecessary and highly undesirable confusion, which would be further exacerbated by current uncertainty about the generic classification of both species.

8. Kuch believes that no appeal for the conservation of *albocarinatus* is justified, as the senior name *pulcher* has been used at least four times for the eastern species since 1947. However, two of these references (J.A. Peters, 1960; J.A. Peters & Orejas-Miranda, 1970) provide descriptions which clearly refer to the western species, although they indicate an eastern distribution; the other two references (Klemmer, 1963; U.S. Navy Department, Office of Naval Intelligence, 1968) provide no information other than distribution, leaving the question of which species was being referred to open to discussion. Given the influential nature and wide availability of the publications of Boulenger (1896) and J.A. Peters (1960), and the relative obscurity of the original description of *pulcher* by Peters (1862), it seems likely that many subsequent authors meant the western form described under the name *pulcher* by Boulenger (1896) and J.A. Peters (1960), and copied the erroneous locality indication from J.A. Peters (1960). Furthermore, all four of these publications also include separate accounts of the eastern species under the unambiguous names *albocarinatus* Shreve, 1934 and *alticolus* Parker, 1934, suggesting that none of the authors regarded *pulcher* as conspecific with *albocarinatus* and *alticolus*. Consequently, I regard the inference that they were in fact referring to the eastern species as described by Peters (1862) as unproven, and the hypothesis that they were following Boulenger (1896) and Peters (1960) in referring to the western species as *pulcher*, albeit with erroneous locality information, as equally probable. The name *albocarinatus* has been used as valid for the eastern species on at least 22 occasions since 1947, as noted in Kuch's comment. In the absence of any post-1947 publications irrefutably associating the name *pulcher* with the eastern species, as evidenced by descriptions, morphological data or illustrations, I conclude that there are no obstacles to the conservation of the name *albocarinatus* under Article 79. The Code states explicitly that 'The Principle of Priority is to be used to promote stability and is not intended to be used to upset a long-accepted name in its accustomed meaning through the introduction of an unused name...' (Article 23b). In this case, a strict interpretation of the Principle of Priority would not just lead to a well-known, unambiguous name (*albocarinatus*) simply being supplanted by a senior name (*pulcher*) rarely used for the species, but would lead to further confusion because the senior name has been used extensively for another species. This clearly contravenes the intent of the Code.

9. The Commission is accordingly asked:

(1) to reject the proposal of Schätti & Smith for the designation of a neotype for *Trigonocephalus pulcher* Peters, 1862;

(2) to suppress the name *pulcher* Peters, 1862, as published in the binomen *Trigonocephalus pulcher*, for the purposes of the Principle of Priority but not for those of the Principle of Homonymy;

(3) to place the following names on the Official List of Specific Names in Zoology:
   (a) *albocarinatus* Shreve, 1934, as published in the binomen *Bothrops albocarinata*;
   (b) *campbelli* Freire, 1991, as published in the binomen *Bothrops campbelli*.

The consequence of this would be that the western species would bear the unambiguous name *campbelli* Freire, 1991, as defined by the holotype INHMT 1956 in the collection of the Instituto Nacional de Higiene y Medicina Tropical 'Leopoldo Izquieta Pérez' in Guayaquil, Ecuador. The name *almawebi* Schätti & Kramer, 1993, is a junior subjective synonym of *campbelli* Freire, 1991. The eastern species would bear the name *albocarinatus* Shreve, 1934, which is defined by holotype (MCZ 36989 in the collection of the Museum of Comparative Zoology, Cambridge, Massachusetts) with *alticolus* as its junior subjective synonym.

Acknowledgements

I wish to thank Ulrich Kuch and Ronald L. Gutberlet, Jr., for valuable discussions, and for allowing me access to the texts of their comments prior to publication. I also thank Jonathan A. Campbell, William W. Lamar and Patrick David for helpful suggestions and information.

Additional reference

Pérez-Santos, C. & Moreno, A.G. 1988. *Ofidios de Colombia*. 576 pp. Museo Regionale di Scienze Naturali, Torino.

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In this case there are now three solutions in front of us in solving the problem of uniform name application: (1) keeping the specific name of *Trigonocephalus pulcher* Peters, 1862 for the eastern species in conformance with the identity of the type, and adopting *campbelli* Freire, 1991 for the western species, as suggested by Drs Kuch (BZN **54**: 245–249) and Gutberlet & Harvey (above); (2) keeping Boulenger's application of *pulcher* to the western species, and using *albocarinatus* Shreve, 1934 for the eastern species, as proposed in the application submitted by Dr Schätti and myself; or (3) suppressing *pulcher* completely, thus using *albocarinatus* for the eastern species and *campbelli* for the western, as suggested by Dr Wüster (above). Which solution provides the most stable and universal nomenclature?

Each has at least some following already. The information provided at present by various commentators leads me to the conclusion that the Boulengerian application of *pulcher* has had the greatest following, in spite of the fact that at least some misinterpretations have plagued most commentators.

However, if that conclusion is valid, then the steps proposed in the application should be taken to ensure pertinence of the name *pulcher* to the western species (i.e. designation of a neotype in that sense) and hence *albocarinatus* to the eastern species. Regardless, the ultimate decision should be based on the majority perception of the solution that would be least disturbing to nomenclatural stability.